

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A phase shifting wavefront superimposition method, ~~in particular a phase shifting interferometry method, for wavefront measurement of optical imaging systems, wherein comprising:~~

registering intensities (I_n) of superimposition patterns of object wavefronts and reference wavefronts for a predefined location, wherein the superimposition patterns are produced successively in over time with respective phase shifting by shifts having predefined phase steps (φ_n) for a respectively predefined location;

from the registered intensities, determining an object-induced phase difference (φ) between the object wavefront wavefronts and the reference wavefront wavefronts for the ~~respective~~ location;

determining phase shift errors ($\delta\varphi_n$) in the superimposition patterns produced successively by means of a spatial superimposition pattern evaluation; and

correctively utilizing the determined phase shift errors in determining the object-induced phase difference (φ) ~~by correctively utilizing the determined phase shift errors.~~

2. (currently amended): The phase shifting wavefront superimposition method according to claim 1, wherein predefined phase jumps in an at least one-dimensionally periodic

structure are used to provide at least one of the object wavefronts ~~or~~ and the reference wavefronts
~~in the determination of the phase shift errors.~~

3. (currently amended): The phase shifting wavefront superimposition method according to claim 1 or 2, wherein, ~~in order to said~~ correctively utilize ~~utilizing~~ the phase shift errors ~~in the determination of~~ determining the object-induced phase difference, comprises determining compensating correction contributions ~~($\delta\phi_n$)($\delta\omega_n$)~~ to apodisation weights ~~(ϕ_n)(ω_n)~~ are determined and used using the apodisation weights in a relationship equation of the object-induced phase difference as a function of the superimposition pattern intensity.

4. (previously presented): The phase shifting wavefront superimposition method according to claim 1 or 2, wherein the method is configured as a phase shifting interferometry method for wavefront measurement of an optical imaging system.

5. (new): A phase shifting wavefront superimposition method, comprising:
determining pattern intensities of temporally successive superimposition patterns of reference and object wavefronts for a predetermined location, where each successive pattern is obtained by phase shifting the object and reference wavefronts relative to one another;
determining phase shift errors in the temporally successive superimposition patterns using spatial superimposition pattern evaluation; and

AMENDMENT UNDER 37 C.F.R. §1.111
USSN 10/697,239
Page 5

determining an object-induced phase difference between the object wavefronts and the reference wavefronts for the predetermined location from the pattern intensities and utilizing the determined phase shift errors for correction.